

Amendments to the Claims

This listing of claims replaces prior versions:

Claim 1 (Currently Amended): A manufacturing system for manufacturing printed wiring boards of plural types, said printed wiring boards scheduled to be manufactured are laid out on at least one predetermined manufacturing block, comprising:

a schedule data storage unit storing manufacturing schedule data including printed wiring board data, each type of the printed wiring boards and a number of each of the printed wiring boards scheduled to be manufactured;

a detecting unit detecting a plurality of fractional printed wiring boards ~~which should,~~ said fractional printed wiring board to be laid out to a format of a single predetermined manufacturing block together with a plurality of printed wiring boards having a different type within the printed wiring boards scheduled to be manufactured based on the manufacturing schedule data stored in said schedule data storage unit, printed wiring board data, and predetermined manufacturing block data, said detecting unit being embodied in a CPU and a recording medium, said recording medium including a single piece drawing number data library storing said printed wiring board data and a panelizing data library storing said predetermined manufacturing block data, said detecting being carried out as follows:

- (1) said predetermined manufacturing block data are read out from said recording medium;
- (2) data of a certain type of ordered printed wiring board are read out from the recording medium; and

(3) printed wiring boards are virtually laid out on the predetermined manufacturing block according to the quantity ordered;

wherein processes (1) – (3) are carried out for each type of ordered printed wiring board;

a condition data storage unit storing manufacturing condition data for laying out printed wiring boards of the plural types on a format of a single predetermined manufacturing block;

a grouping unit grouping each of the fractional printed wiring boards detected by said detecting unit into any of a number of groups according to the manufacturing condition data stored in said condition data storage unit; and

a determining unit determining, per group, layout to the at least one predetermined manufacturing block of the fractional printed wiring board.

Claim 2 (Previously Presented): A manufacturing system according to claim 1, wherein said detecting unit, if the number of printed wiring boards of a certain type scheduled to be manufactured cannot be divided completely by the maximum number of the printed wiring boards which can be laid out in a single predetermined manufacturing block, detects each printed wiring board corresponding to the number smaller than the maximum number or each printed wiring board corresponding to the remainder of the division as the fractional printed wiring board.

Claim 3 (Previously Presented): A manufacturing system according to claim 1, wherein the manufacturing condition data is data produced by combining manufacturing request person's condition and manufacturer's condition.

Claim 4 (Previously Presented): A manufacturing system according to claim 3, wherein the manufacturing request person's condition is shipment date.

Claim 5 (Previously Presented): A manufacturing system according to claim 3, wherein the manufacturer's condition is number of layers of the printed wiring boards.

Claim 6 (Previously Presented): A manufacturing system according to claim 4, wherein the manufacturer's condition is number of layers of the printed wiring boards.

Claim 7 (Previously Presented): A manufacturing system according to claim 1 further comprising:

a CAD data creating unit creating CAD data corresponding to a combination determined by said determining unit; and

a CAD data converting unit creating CAM data or CAT data corresponding to CAD data created by said CAD data creating unit.

Claim 8 (Previously Presented): A manufacturing system according to claim 7 further comprising:

manufacturing unit group carrying out manufacturing process for the printed wiring board using the CAM data or CAT data created by said CAD data converting unit.

Claim 9 (Currently Amended): A manufacturing method for manufacturing printed wiring boards of plural types, said printed wiring boards scheduled to be manufactured are laid out to at least one predetermined manufacturing block, comprising:

reading manufacturing schedule data including printed wiring board data, each of the plural types of the printed wiring boards and a number of each of the printed wiring boards scheduled to be manufactured;

detecting a plurality of fractional printed wiring boards ~~which should,~~ said fractional printed wiring boards to be laid out to a format of a single predetermined manufacturing block together with a plurality of printed wiring boards having a different type within the printed wiring boards scheduled to be manufactured based on the manufacturing schedule data, printed wiring board data, and predetermined manufacturing block data, said detecting of fractional printed wiring boards being carried out by using a CPU and a recording medium, said recording medium including a single piece drawing number data library storing said printed wiring board data and a panelizing data library storing said predetermined manufacturing block data, said detecting further being carried out as follows:

- (1) said predetermined manufacturing block data are read out from said recording medium;
- (2) data of a certain type of ordered printed wiring board are read out from the recording medium; and
- (3) printed wiring boards are virtually laid out on the predetermined manufacturing block according to the quantity ordered;

wherein processes (1) – (3) are carried out for each type of ordered printed wiring board;

reading a manufacturing condition data for laying out printed wiring boards of the plural types on a format of a single predetermined manufacturing block;

grouping each of the detected fractional printed wiring boards into any of a number of groups according to the manufacturing condition data; and

determining, per group, layout to the at least one predetermined manufacturing block of the fractional printed wiring board.

Claim 10 (Currently Amended): A computer-readable recording medium for recording a computer program for making a computer to carry out processes for manufacturing printed wiring boards of plural types, said printed wiring boards scheduled to be manufactured are laid out to at least one predetermined manufacturing block, the program comprising:

reading manufacturing schedule data including printed wiring board data, each of the plural types of the printed wiring boards and a number of each of the printed wiring boards scheduled to be manufactured;

detecting a plurality of fractional printed wiring boards ~~which should, said fractional printed wiring boards to~~ be laid out to a format of a single predetermined manufacturing block together with a plurality of printed wiring boards having a different type within the printed wiring boards scheduled to be manufactured based on the multiple manufacturing schedule data, printed wiring board data, and predetermined manufacturing block data, said detecting of fractional printed wiring boards being carried out by using a CPU and a recording medium, said recording medium including a single piece drawing number data library storing said printed wiring board data and a panelizing data library storing said predetermined manufacturing block data, said detecting further being carried out as follows:

- (1) said predetermined manufacturing block data are read out from said recording medium;
- (2) data of a certain type of ordered printed wiring board are read out from the recording medium; and
- (3) printed wiring boards are virtually laid out on the predetermined manufacturing block according to the quantity ordered;

wherein processes (1) – (3) are carried out for each type of ordered printed wiring board;

reading manufacturing condition data for laying out printed wiring boards of the plural types to a format of a single predetermined manufacturing block;

grouping each of the detected fractional printed wiring boards into any of a number of groups according to the manufacturing condition data; and

determining, per group, layout to the at least one predetermined manufacturing block of the fractional printed wiring board.